

LOT 1-2 CONCESSION 5 HOUGHTON

Site Number 002030

LOWER SIDE ROAD, HOUGHTON

3.5 km E of County Rd 28

Ontario Structure Inspection Manual - Inspection Form

Site Number:

Inventory Data:			
Structure Name <input type="text" value="Lot 1-2 Concession 5 Houghton"/>			
Main Hwy/Road # <input type="text" value="LOWER SIDE ROAD"/>	<input checked="" type="checkbox"/> On <input type="checkbox"/> Under	Crossing Type: <input type="checkbox"/> Rail <input type="checkbox"/> Road <input type="checkbox"/> Navig. Water <input type="checkbox"/> Ped. <input type="checkbox"/> Other <input checked="" type="checkbox"/> Non-Navig. Water	
Hwy/Road Name <input type="text" value="LOWER SIDE ROAD, HOUGHTON"/>			
Structure Location <input type="text" value="3.5 km E of County Rd 28"/>			
Latitude <input n"="" type="text" value="42d 35' 58"/>	Longitude <input type="text" value="80d 37' 22.2" w"=""/>		
Owner(s) <input type="text" value="Norfolk County"/>	Heritage Designation: <input checked="" type="checkbox"/> Not Cons. <input type="checkbox"/> Cons./not App.	<input type="checkbox"/> List/not Design. <input type="checkbox"/> Design./not List	<input type="checkbox"/> Desig. & List
MTO Region <input type="text" value="30"/> Southwestern	Road Class: <input type="checkbox"/> Freeway <input type="checkbox"/> Arterial <input type="checkbox"/> Collector <input checked="" type="checkbox"/> Local		
MTO District <input type="text" value="31"/> London / Stratford	Posted Speed <input type="text" value="80"/>	No. of Lanes <input type="text" value="2"/>	
Old County <input type="text" value="20"/> Norfolk	AADT <input type="text" value="69"/>	% Trucks <input type="text"/>	
Geographic Twp. <input type="text" value="1126"/> Houghton	Inspection Route Sequence <input type="text"/>		
Structure Type <input type="text" value="15"/> Rigid Frame, Vertical Legs	Interchange Number <input type="text"/>		
Total Deck Length <input type="text" value="14"/> (m)	Interchange Structure Number <input type="text"/>		
Overall Str. Width <input type="text" value="14.8"/> (m)	Min. Vertical Clearance <input type="text" value="3"/> (m)		
Total Deck Area <input type="text" value="207.2"/> (m ²)	Special Route <input type="checkbox"/> Truck <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> School <input type="checkbox"/> Bicycle		
Roadway Width <input type="text" value="10"/> (m)	Detour Length Around Bridge <input type="text" value="6.5"/> (km)		
Skew Angle <input type="text"/> (Degrees)	Direction of Structure <input type="text" value="North / South"/>		
No. of Spans <input type="text" value="1"/>	Fill on Structure <input type="text" value="1"/> (m)		
Span Length <input type="text" value="4.2"/> (m)			

Historical Data:			
Year Built <input type="text" value="1999"/>	Year of Last Major Rehab. <input type="text"/>		
Last OSIM Inspection <input type="text" value="June 17, 2014"/>	Last Evaluation <input type="text"/>		
Last Enhanced OSIM Inspection <input type="text"/>	Current Load Limit <input type="text" value="/ /"/> (tonnes)		
Enhanced Access Equipment (ladder, boat, lift, etc.) <input type="text"/>	Load Limit By-Law # <input type="text"/>		
Last Underwater Inspection <input type="text"/>	By-Law Expiry Date <input type="text"/>		
Last Condition Survey <input type="text"/>			
Rehab History: (Date/description)			

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Field Inspection Information:		
Date of Inspection:	July 6, 2016	Type of Inspection: <input checked="" type="checkbox"/> OSIM <input type="checkbox"/> Enhanced OSIM
Inspector:	Matt Alderson, G. Douglas Vallee Ltd.	
Others in Party:	N/A	
Access Equipment Used:	Hammer, Binoculars, Measuring Tape, Camera, etc.	
Weather:	Sunny	
Temperature:	29 °C	

Additional Investigation Required:	Priority		
	None	Normal	Urgent
Material Condition Survey			
<input checked="" type="checkbox"/> Detailed Deck Condition Survey:		X	
<input checked="" type="checkbox"/> Non-destructive Delamination Survey of Asphalt-Covered Deck:	X		
<input checked="" type="checkbox"/> Concrete Substructure Condition Survey:	X		
<input checked="" type="checkbox"/> Detailed Coating Condition Survey:	X		
<input checked="" type="checkbox"/> Detailed Timber Investigation	X		
<input checked="" type="checkbox"/> Post-Tensioned Strand Investigation	X		
Underwater Investigation:	X		
Fatigue Investigation:	X		
Seismic Investigation:	X		
Structure Evaluation:	X		
Monitoring			
<input checked="" type="checkbox"/> Monitoring of Deformations, Settlements and Movements:			X
<input checked="" type="checkbox"/> Monitoring Crack Widths:	X		
Investigation Notes:	Monitor erosion of road regularly. Cables loose on barrier. No hazard signs.		

Overall Structure Notes:			
Recommended Work on Structure:	<input type="checkbox"/> None	<input type="checkbox"/> Minor Rehab.	<input type="checkbox"/> Replace
	<input checked="" type="checkbox"/> Maintenance	<input type="checkbox"/> Major Rehab.	
Timing of Recommended Work:	<input type="checkbox"/> 1 to 5 years	<input type="checkbox"/> 6 to 10 years	
Overall Comments:	Repair loose cables and road erosion, replace broken / rotten posts. Erosion control.		
Date of next Inspection:	July 6, 2018		

Suspected Performance Deficiencies

- | | | |
|---|--|---|
| <ul style="list-style-type: none"> 01 Load carrying capacity 02 Excessive deformations (deflections & rotations) 03 Continuing settlement 04 Continuing movements 05 Seized bearings | <ul style="list-style-type: none"> 07 Bearing not uniformly loaded/unstable 08 Jammed expansion joint 09 Pedestrian/vehicular hazard 10 Rough riding surface 11 Deck drainage | <ul style="list-style-type: none"> 12 Slippery surfaces 13 Flooding/channel blockage 14 Undermining of foundation 15 Unstable embankments 16 Other |
|---|--|---|

Maintenance Needs

- | | | |
|---|--|---|
| <ul style="list-style-type: none"> 01 Lift and swing bridge maintenance 02 Bridge cleaning 03 Bridge handrail maintenance 04 Painting steel bridge structures 05 Bridge deck joint repair 06 Bridge bearing maintenance | <ul style="list-style-type: none"> 07 Repair to structural steel 08 Repair of bridge concrete 09 Repair of bridge timber 10 Bailey bridges - maintenance 11 Animal/pest control 12 Bridge surface repair | <ul style="list-style-type: none"> 13 Erosion control at bridges 14 Concrete sealing 15 Rout and seal 16 Bridge deck drainage 17 Scaling (Loose concrete or ACR steel) 18 Other |
|---|--|---|

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Rehabilitation Required:		Element	Priority				Estimated Construction Cost
Rehab	Replace		Urgent	Within 1 yr	1-5 yrs	6-10 yrs	
		Wearing Surface (Approaches)					
		Railing System					\$20,000
		Barrels					
		Inlet Components					
		Outlet Components					
		Streams and Waterways					\$5,000
		Foundation (below ground level)					
Total Cost							\$25,000

Associated Work:	Comments	Estimated Construction Cost
Additional Investigations		
Traffic Management		
Utilities		
Road Allowance		
Environmental Assessment		
Engineering		
Other		
Contingencies		
Total Cost		\$0

Justification:		
Notes:	Construction Cost:	\$25,000
	Associated Work Cost:	\$0
	TOTAL Estimated Cost:	\$25,000

Ontario Structure Inspection Manual - Inspection Form

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Element Data

Element Group:	1600 Approaches					Length:	
Element Name:	1601 Wearing Surface (Approaches)					Width:	
Location:	Top of Fill					Height:	
Material:	2 Asphalt					Count:	2
Element Type:						Total Quantity:	2 Each
Environment:	Severe					Limited Inspection:	
Protection System:	Unknown					Perform. Deficiencies	
Condition	Units	Exc.	Good	Fair	Poor		
Data:	Each	0	2	0	0		
Comments: Minor settlement at structure edges.							
Recommended Work: Rehab <input type="checkbox"/> Replace <input type="checkbox"/>					Maintenance Needs:		
Timing: Urgent <input type="checkbox"/> < 1yr <input type="checkbox"/> 1 - 5 yr <input type="checkbox"/> 6 - 10 yr <input type="checkbox"/>					<input type="checkbox"/> Urgent <input type="checkbox"/> 1 year <input type="checkbox"/> 2 year		

Element Group:	400 Barriers					Length:	93.6
Element Name:	402 Railing System					Width:	
Location:						Height:	
Material:	Steel Cable					Count:	2
Element Type:						Total Quantity:	187.2 m
Environment:	Severe					Limited Inspection:	
Protection System:	Unknown					Perform. Deficiencies	
Condition	Units	Exc.	Good	Fair	Poor		
Data:	m	0	0	100	87.2		
Comments: Cables loose, one (1) broken/rotted post noted on southwest near culvert inlet. Many cracked and rotted posts. Guiderail is overgrown.							
Recommended Work: Rehab <input type="checkbox"/> Replace <input type="checkbox"/>					Maintenance Needs: Bridge Railing System Maintenance		
Timing: Urgent <input type="checkbox"/> < 1yr <input type="checkbox"/> 1 - 5 yr <input type="checkbox"/> 6 - 10 yr <input type="checkbox"/>					<input type="checkbox"/> Urgent <input type="checkbox"/> 1 year <input checked="" type="checkbox"/> 2 year		

Element Group:	1200 Culverts					Length:	14.8
Element Name:	1203 Barrels					Width:	4.2
Location:	Inside					Height:	3
Material:	4 Cast-in-place Concrete					Count:	1
Element Type:						Total Quantity:	150.96 sq.m
Environment:	Moderate					Limited Inspection:	
Protection System:	Unknown					Perform. Deficiencies	
Condition	Units	Exc.	Good	Fair	Poor		
Data:	sq.m	0	150.96	0	0		
Comments: Some staining at joints.							
Recommended Work: Rehab <input type="checkbox"/> Replace <input type="checkbox"/>					Maintenance Needs:		
Timing: Urgent <input type="checkbox"/> < 1yr <input type="checkbox"/> 1 - 5 yr <input type="checkbox"/> 6 - 10 yr <input type="checkbox"/>					<input type="checkbox"/> Urgent <input type="checkbox"/> 1 year <input type="checkbox"/> 2 year		

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Element Data

Element Group:		1200 Culverts				Length:	4.2
Element Name:		1201 Inlet Components				Width:	0.3
Location:		North				Height:	3
Material:		4 Cast-in-place Concrete				Count:	1
Element Type:						Total Quantity:	3.06 sq.m
Environment:		Moderate				Limited Inspection:	
Protection System:		Unknown				Perform. Deficiencies	
Condition Data:	Units sq.m	Exc. 0	Good 2.86	Fair 0.2	Poor 0		
Comments: Minor deterioration on north fascia.							
Recommended Work: Rehab <input type="checkbox"/> Replace <input type="checkbox"/>					Maintenance Needs:		
Timing: Urgent <input type="checkbox"/> < 1yr <input type="checkbox"/> 1 - 5 yr <input type="checkbox"/> 6 - 10 yr <input type="checkbox"/>					<input type="checkbox"/> Urgent <input type="checkbox"/> 1 year <input type="checkbox"/> 2 year		

Element Group:		1200 Culverts				Length:	4.2
Element Name:		1202 Outlet Components				Width:	0.3
Location:		South				Height:	3
Material:		4 Cast-in-place Concrete				Count:	1
Element Type:						Total Quantity:	3.06 sq.m
Environment:		Moderate				Limited Inspection:	
Protection System:		Unknown				Perform. Deficiencies	
Condition Data:	Units sq.m	Exc. 0	Good 3.06	Fair 0	Poor 0		
Comments:							
Recommended Work: Rehab <input type="checkbox"/> Replace <input type="checkbox"/>					Maintenance Needs:		
Timing: Urgent <input type="checkbox"/> < 1yr <input type="checkbox"/> 1 - 5 yr <input type="checkbox"/> 6 - 10 yr <input type="checkbox"/>					<input type="checkbox"/> Urgent <input type="checkbox"/> 1 year <input type="checkbox"/> 2 year		

Element Group:		1400 Embankments & Streams				Length:	
Element Name:		1401 Streams and Waterways				Width:	
Location:						Height:	
Material:		Earth/Native Material				Count:	1
Element Type:						Total Quantity:	1 Each
Environment:		Moderate				Limited Inspection:	
Protection System:		None				Perform. Deficiencies	
Condition Data:	Units Each	Exc. 0	Good 0.5	Fair 0	Poor 0.5	Continuing settlement	
Comments: Banks stable. Erosion on northeast quadrant deteriorating road.							
Recommended Work: Rehab <input type="checkbox"/> Replace <input type="checkbox"/>					Maintenance Needs: Erosion Control at Bridges		
Timing: Urgent <input type="checkbox"/> < 1yr <input type="checkbox"/> 1 - 5 yr <input type="checkbox"/> 6 - 10 yr <input type="checkbox"/>					<input type="checkbox"/> Urgent <input checked="" type="checkbox"/> 1 year <input type="checkbox"/> 2 year		

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Element Data

Element Group:	1300 Foundations					Length:	
Element Name:	1301 Foundation (below ground level)					Width:	
Location:						Height:	
Material:						Count:	1
Element Type:						Total Quantity:	1 Each
Environment:						Limited Inspection:	X
Protection System:						Perform. Deficiencies	
Condition Data:	Units Each	Exc.	Good	Fair	Poor		
Comments: Limited inspection							
Recommended Work: Rehab <input type="checkbox"/> Replace <input type="checkbox"/>						Maintenance Needs:	
Timing: Urgent <input type="checkbox"/> < 1yr <input type="checkbox"/> 1 - 5 yr <input type="checkbox"/> 6 - 10 yr <input type="checkbox"/>						<input type="checkbox"/> Urgent <input type="checkbox"/> 1 year <input type="checkbox"/> 2 year	



Figure 1 East Approach



Figure 2 West Approach



Figure 3 North Profile



Figure 4 South Profile



Figure 5 Upstream



Figure 6 Downstream



Figure 7 Barrel, Looking South



Figure 8 Staining on Soffit



Figure 9 Minor Settlement at Structure Edges



Figure 10 Lifting Lug on Culvert Top



Figure 11 Loose Guiderail Cables